

**7400.685-080 - Research Methods in FCS**

**School of Family and Consumer Sciences**

<http://www3.uakron.edu/witt/rmfcs/rmfcs.htm>

Spring Semesters - Tuesday Evenings 5:20-7:55pm in 209 Schrank Hall South

**Instructor: David D. Witt, Ph.D.**

**Statistic of the Week - No. 1**

**Homework #1 – Elementary Things**

Your Name Here \_\_\_\_\_

1. Complete the following operations:

$(23 + 4) - 8(44-7) =$  \_\_\_\_\_

$4(3/5) - 5(9/12) =$  \_\_\_\_\_

$(2-55)(55-2) + 7 =$  \_\_\_\_\_

2. What is the  $\sum(X)$  for the following column of Xs:

25

33

14

22

03      $\sum(X) =$  \_\_\_\_\_

3. Calculate an average, or arithmetic Mean (known as a lower case **x**) from the above numbers.

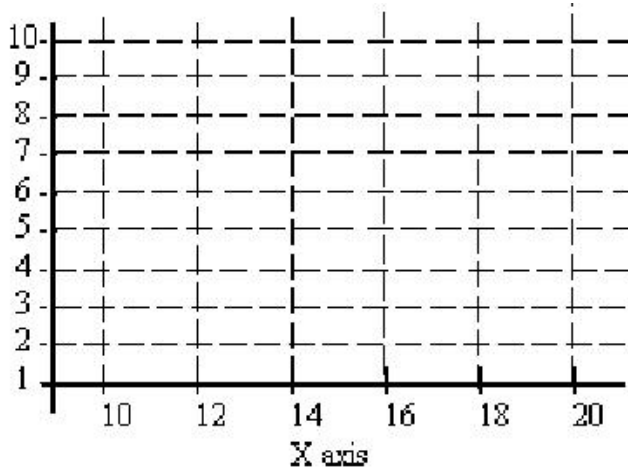
Simply add the column of numbers together and divide the sum by the number of cases. (Hint: there are 5

cases, or  $N=5$ , here). The Mean of X is  $\sum(X)/N = (25+33+14+22+03)/5 =$  \_\_\_\_\_

4. Plot the following list of cases for variables X and Y on the chart below, and connect the dots.

X	Y
10	3
12	5
14	6
16	8
18	9
20	10

Y  
a  
x  
i  
s



calculate the Mean of the Xs = \_\_\_\_\_

calculate the Mean of the Ys = \_\_\_\_\_

5. To get the next problem correctly, you will have to multiply the "scores" (**X's**) by the frequency (**f's**)  
 Here are some test scores for a quiz:

Scores(X)	Freq (f)	f(x) or X
15	01	_____
14	03	_____
13	02	_____
12	04	_____
11	00	_____
10	07	_____
09	12	_____
08	11	_____
07	03	_____
06	1	_____

Calculate the  $\sum X$  for these data: \_\_\_\_\_

Calculate the arithmetic mean for these data. \_\_\_\_\_

6. Look at the Frequency Table below. It is a range of income categories for government lawyers who make between \$50 to \$500 per minute for their services.

Fill in all the blanks, such as:

- the Deviation from the mean (you'll have to calculate the Mean Fee first and insert it after the (-) minus sign
- the Deviation Squared for each lawyer

Then calculate the NSize, the Sum of the Xs, the Sum of the Deviations from the Mean, and the Sum of the Deviations Squared.

Lawyer #	Fee in \$ per Minute	Deviation from the Mean	Deviation Squared
1	\$50	\$50-Mean = _____	
2	\$100	\$100-Mean = _____	
3	\$125	\$125-Mean = _____	
4	\$300	\$300-Mean = _____	
5	\$500	\$500-Mean = _____	
N= __ sample size	$\sum X$ = _____ (sum of the Xs)	$\sum (X-\text{mean})$ = _____ (sum of the "X-mean"s	$\sum (X-\text{mean})^2$ = _____

This Distribution Table, or Frequency Table, is the cornerstone for standardizing the way we calculate statistics. If you'll take the time to always make a Frequency Table, you'll never get confused.

See next page

Means - Part II - Your Name Here \_\_\_\_\_

1. Below is a distribution table of data concerning the number of letters that a random sample of 200 freshman coeds wrote to their parents during the first term while at college.

a. Calculate the mean number of letters per coed during this term.

b. Answer the following questions by indicating whether each statement is true (T) or false (F)

\_\_\_ The variable in the above data is number of letters.

\_\_\_ The statistical unit is letters.

\_\_\_ 50% of the coeds wrote less than 4 letters to their parents during their 1st term.

c. Plot the data on a Cartesian Plane and connect the coordinates, where the # letters is the y-axis, and the # of Coeds is the x-axis. Draw a vertical line on the x-axis where the mean should be.

Here's the distribution table (Hint: multiply the number of coeds by the number of letters (across)

Then add the  $f(X)$ 's to get the sum of the Xs.

This Number of Coeds (X) wrote	This Number of Letters (f)	$f(X)$
25	1	
20	2	
15	3	
45	4	
30	5	
25	6	
15	7	
35	8	

Mean number of Letters

Plot the Distribution: